Table 72. Overnight Capital Cost Characteristics for Renewable Energy Generating Technologies in Four Cases (2002$/kW)

Technology	Overnight Costs in 2003	Year	Total Overnight Costs[1] Reference	Low Renewable	High Renewable	DOE Goals
Geothermal[2]	2,003					
		2005	1,882	1,699	1,851	1,746
		2010	1,685	1,890	1,509	1,174
		2025	2,293	2,524	1,951	1,452
Landfill Gas[3]	1,475					
		2005	1,470	1,470	1,470	1,470
		2010	1,454	1,454	1,454	1,454
		2025	1,404	1,404	1,404	1,404
Photovoltaic[4]	3,961					
		2005	3,889	3,981	2,838	3,370
		2010	3,684	9,934	2,582	1,743
		2025	2,677	3,702	1,817	1,155
Solar Thermal[4]	2,625					
		2005	2,577	2,625	2,553	3,004
		2010	2,458	2,625	2,374	3,091
		2025	2,062	2,577	1,804	2,898
Biomass[5]	1,731					
		2005	1,715	1,869	1,818	1,688
		2010	1,672	1,869	1,690	1,590
		2025	1,460	1,869	1,234	1,287
Wind	1,015					
		2005	1,010	1,015	1,010	977
		2010	1,008	1,015	1,008	888
		2025	998	1,015	986	873

[1]Overnight capital cost (i.e. excluding interest charges), plus contingency, learning, and technological optimism factors, excluding regional multipliers.

[2]Geothermal costs are specific for each site. The table entries represent the least cost unit available in the specified year in the Northwest Power Pool region, where most of the proposed sites are located.

[3]Provided to show evolution of landfill gas costs through 2025; for landfill gas, assumptions are the same in all four cases.

[5]Costs decline slightly in the Low Renewable case for photovoltaic and solar thermal technologies as technological optimism is factored into initial costs (see pg. 74 in the chapter discussing the EMM). However, there is no learning-by-doing assumed once the optimism factor has been removed.

[5]Biomass initial costs for the Low Renewable and High Renewable cases are higher than initial costs in the Reference case as technological optimism is assumed to apply to the entire plant in the Low and High cases, but only applies to the fuel-handling portion of the plant in the Reference case. The DOE goals case initially uses the reference case capital costs; however, neither technological optimism or learning is applied, and subsequent years' capital costs are directly assigned in the DOE goals case.

Source AEO2004 National Energy Modeling System runs: aeo2004.d101703e (Reference case), eere04.d103103a (DOE Goals case), hiren100.d103103a (High Renewable case), lorenew0.d102703b (Low Renewable case).